

What is claimed is:

1. A method for detecting at least one analyte held by an optical disc that includes optically readable structures, said method comprising the steps of:

providing the optical disc to an optical disc reader;
directing at least one beam of electromagnetic radiation to the optical disc and scanning the beam over the optical disc;

acquiring radiation returned from or transmitted through the optical disc using a detector of the optical disc reader;

generating from said acquired radiation at least one analyte signal that is indicative of the presence of the analyte; and

generating from said acquired radiation operational signals which enable the optical disc reader to track said optically readable structures.

2. The method according to claim 1 wherein the optical disc reader is a CD reader or a DVD reader.

3. The method according to claim 1 wherein said optically readable structures have encoded speed information, and the method includes generating from said acquired radiation signals which enable the optical disc reader to rotate the optical disc at a speed that is determinable from said speed information.

4. The method according to claim 3 wherein said analyte signal and at least one of said operational signals are generated at the same time.

5. The method according to claim 3 wherein said analyte signal and said operational signals are generated at different times.

6. The method according to claim 3 wherein said detector is a quad detector, and said analyte signal is a quad sum signal.

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7. The method according to claim 3 wherein the optical disc includes a first layer which includes a surface impressed with said optically readable structures which are coated with a first reflective layer, and the method includes focusing the beam on the first reflective layer.

8. The method according to claim 7 further comprising focusing the beam on the analyte.

9. The method according to claim 7 wherein the optical disc includes a second layer which is laser-proximal to the first layer, and the analyte is located between the first layer and the second layer.

10. The method according to claim 9 wherein said surface of the first layer includes an area which lacks optically readable structures that have encoded tracking information, and said analyte signal is generated from radiation returned from said area or the analyte.

11. The method according to claim 7 comprising directing at least a portion of the beam to the analyte through the first layer.

12. The method according to claim 11 wherein the first reflective layer is semi-reflective and located laser-distal to the first layer, and at least a portion of the beam is returned from the first reflective layer to generate said operational signals.

13. The method according to claim 12 wherein the optical disc includes a second reflective layer which is laser-distal to the first layer, and at least a portion of the beam is returned from the second reflective layer or the analyte to generate said analyte signal.

14. The method according to claim 13 wherein said surface of the first layer includes an area which lacks optically readable structures that have encoded tracking information, and the method includes directing at least portion of the beam to the analyte through said area.

15. The method according to claim 13 wherein said surface of the first layer includes an area which lacks a reflective coating, and the method includes directing at least a portion of the beam to the analyte through said area.

16. The method according to claim 13 comprising focusing the beam on the analyte.

17. The method according to claim 13 wherein the optical disc has encoded focus control information for controlling a movement of the beam's focal point, and the method includes reading said focus control information and directing a movement of the beam's focal point.

18. The method according to claim 17 wherein the optical disc has encoded assay information for conducting an assay on the analyte, and the method includes reading said assay information and conducting the assay on the analyte.

19. The method according to claim 7 wherein at least part of the analyte is within 85 micrometers from the first reflective layer.

20. The method according to claim 7 wherein at least part of the analyte is within 70 micrometers from the first reflective layer.

21. The method according to claim 7 wherein at least part of the analyte is within 15 micrometers from the first reflective layer.

22. The method according to claim 7 wherein at least part of the analyte is within a focal depth of the beam which is focused on the first reflective layer.

23. The method according to claim 7 wherein the optical disc includes a second layer which is laser-proximal to the first layer and which includes a surface impressed with optically readable structures which are coated with a second reflective layer, and the method includes moving the focus of the beam from the first reflective layer to the second reflective layer.

24. The method according to claim 3 further comprising the step of directing at least portion of the beam to pass through the optical disc to reach the detector.

25. The method according to claim 3 wherein said analyte signal is a focusing servo signal.

26. A method for detecting at least one analyte held by an optical disc that includes a hologram that has encoded trackable features, said method comprising the steps of:

providing the optical disc to an optical disc reader;

directing at least one beam of electromagnetic radiation to the optical disc and scanning the beam over the optical disc;

acquiring radiation returned from or transmitted through the optical disc using a detector of the optical disc reader;

generating from said acquired radiation at least one analyte signal that is indicative of the presence of the analyte; and

generating from said acquired radiation operational signals which enable the optical disc reader to track said encoded trackable features in an image plane of the hologram.

27. The method according to claim 26 wherein the optical disc reader is a CD reader or a DVD reader, and said beam of electromagnetic radiation is a laser beam.

28. The method according to claim 26 wherein the hologram has encoded speed information, and the method includes generating from said acquired radiation signals which enable the optical disc reader to rotate the optical disc at a speed that is determinable from said speed information.

29. The method according to claim 28 further comprising the step of focusing the beam on the image plane of the hologram.

30. The method according to claim 29 wherein at least part of the analyte is located within the image plane of the hologram.

31. The method according to claim 29 wherein the analyte is non-planar with the image plane of the hologram.

32. The method according to claim 29 further comprising the step of focusing the beam on the analyte.

33. The method according to claim 28 wherein said analyte signal and at least one of said operational signals are generated at the same time.

34. The method according to claim 28 wherein said analyte signal and said operational signals are generated at different times.

35. The method according to claim 28 wherein said detector is a quad detector, and said analyte signal is a quad sum signal.

36. The method according to claim 28 wherein said analyte signal is a focusing servo signal.

37. A method for detecting at least one analyte held by an optical disc that includes optically readable structures having encoded speed information, said method comprising the steps of:

providing the optical disc to an optical disc reader;

directing at least one beam of electromagnetic radiation to the optical disc and scanning the beam over the optical disc;

acquiring radiation returned from the optical disc using a first detector of the optical disc reader;

acquiring radiation transmitted through the optical disc using a second detector of the optical disc reader;

generating from the second detector at least one analyte signal that is indicative of the presence of the analyte; and

generating from the first detector operational signals which enable the optical disc reader to track said optically readable structures and rotate the optical disc at a speed which is determinable from said speed information.

- 5 38. An optical disc assembly, comprising:
- optically readable structures which have encoded tracking information and speed
- information for an optical disc reader; and
- an analyte section capable of receiving an analyte which can be detected by the optical
- disc reader.

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